Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A fuel cell system, comprising:

fuel cell having an anode, a cathode, and an electrolyte membrane as a laminate of an electrolyte layer and a hydrogen permeable metal layer composed of a hydrogen permeable material;

a fuel gas supply module that supplies a fuel gas containing hydrogen and a hydrocarbon compound to the anode;

an oxidizing gas supply module that supplies an oxidizing gas to the cathode; and

a supply unit that supplies oxygen and steam to ~~a reformer control unit~~a reformer unit,

wherein the anode of the fuel cell has a first catalyst supported configured to cause an endothermic reaction of the hydrocarbon compound, ~~the reforma~~ reform control unit configured to control the operation of the reformer unit to cause a partial oxidation reaction of the selected material with the supplied oxygen for production of hydrogen to proceed in parallel with steam reforming reaction of the selected material with the supplied steam for production of hydrogen, the reformer ~~control~~ unit configured to support a second catalyst thereon.

2. (Currently Amended) A fuel cell system in accordance with claim 1, wherein the fuel gas supply module comprises:

~~a reformer~~the reformer unit configured to generate hydrogen through a reforming reaction of a selected material; and

~~a reform~~the reform control unit configured to control operation of the reformer unit to generate the hydrocarbon compound with hydrogen.

3. (Original) A fuel cell system in accordance with claim 2, wherein the hydrocarbon compound is methane.

4. (Previously Presented) A fuel cell system in accordance with claim 3, wherein the first catalyst is a methane reforming catalyst including at least one of Ni, Rh, Ru, and their alloys.

5. (Canceled)

6. (Previously Presented) A fuel cell system in accordance with claim 2, said fuel cell system further comprising:

a temperature control unit configured to control an operation temperature of the fuel cell to a preset target temperature to regulate an amount of heat generated by the reaction in the fuel cell.

7. (Previously Presented) A fuel cell system in accordance with claim 6, wherein the temperature control unit configured to control an internal temperature of the reformer unit to make a difference between the internal temperature of the reformer unit and the operation temperature of the fuel cell within a preset range.

8. (Previously Presented) A fuel cell system in accordance with claim 1, wherein the reaction proceeding in the fuel cell is a heat-involved reversible reaction.

9. (Previously Presented) A fuel cell system in accordance with claim 1, wherein the electrolyte layer is made of an inorganic material, and

the hydrogen permeable metal layer forms a base of the electrolyte layer.

10. (Previously Presented) A fuel cell system in accordance with any claim 1, wherein the electrolyte layer is formed as a water-containing electrolyte layer having a water content, and

the hydrogen permeable metal layer is formed on both faces of the water-containing electrolyte layer.

11. (Canceled)

12. (Previously Presented) A fuel cell system in accordance with claim 1, wherein the electrolyte membrane comprising:

a vanadium base layer;

a proton conductor middle layer on either side of the vanadium base layer; and

a palladium coat on an opposite side of either proton conductor middle layer from the side of the proton conductor middle layer contacting the vanadium base layer.